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CLAIMS

[Claim(s)]

[Claim 1]In a display type slot machine which displays a rolling state of two or more reels on a display with a background image, A reel control information generating means which generates rotation and stop information of two or more virtual reels, An image control means to generate a reel picture signal and a background image signal according to reel control information from the above-mentioned reel control information generating means, A display type slot machine provided with a display control means displayed on a display combining the above-mentioned reel picture signal and the above-mentioned background image signal.

[Claim 2]In a display type slot machine which displays a rolling state of two or more reels on a display with a background image, While generating both sides of a reel picture signal and a background image signal according to reel control information from a reel control information generating means which generates rotation and stop information of two or more virtual reels, A control method of a display type slot machine characterized by making it display on a display combining these reels picture signal and a background image signal.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Industrial Application]The invention in this application relates to the technology of imitating two or more rotation reels and displaying characters, such as a number, with a background image, for example on a liquid crystal display, in detail about a display type slot machine and a method for controlling the same.

[0002]

[Description of the Prior Art]3 thru/or 5 reels which equip a periphery with the annular strip to which the traditional mechanical slot machine expressed characters, such as a number and a pictorial device, are installed behind the display window side by side, for example. And after it answers a start signal and all the reels rotate, stop input operation is answered automatically. When a reel stops one by one and all the reels stop, a predetermined prize is awarded to a player with the combination of the character which has appeared in the above-mentioned display window. It is usual that the above-mentioned prize repays the medal of a specified number in a medal-type slot machine according to the size of a prize.

[0003]These days, if the pachinko incorporating the above slot machines is also provided and a pachinko ball wins a prize of a fixed start gate in this case, a slot machine will start. In this case, as for the prize awarded with the combination of the character of each reel in the time of a reel stop, it is common predetermined time or to carry out prescribed frequency rotation in the large-sized bonus gate where a pachinko ball wins a prize easily. This kind of slot machine is usually "becoming it a great success", for example, when the same number or character is located in a line like "BAR", "BAR", and "BAR", "7", "7", "7", and.

[0004]By the way, from small and highly efficient display devices, such as an electrochromatic display display device, having come to be provided inexpensive these days. It replaced with the above mechanical slot machines, and it has resulted so that many display-type slot machines which displayed the picture which imitated the rolling state of two or more reels on the above-mentioned display may be used. According to the such display-type slot machine, since rotational display characters and background display images, such as a reel, can be set up freely, there is an advantage that visual fun can be raised.

[0005]

[Problem to be solved by the invention]However, an old display type slot machine, Although there is flexibility of a background display, it is most which indicated the main proposal the number doubling character which imitated two or more rotation reels to the last, or picture doubling KYARAKU. The rolling state of a reel remains to such an extent that it performs an animation background display independently, and it cannot say that the advantage in the case of constituting a slot machine at a display ceremony is employed efficiently.

[0006]In [the invention in this application is invented under the above-mentioned circumstances,

and] a display type slot machine, For example, while increasing more nearly visual fun by relating a rotation reel display and a background display mutually according to the state of a rotation reel, it is making enabling it to increase the interest of the slot machine as a game more into the SUBJECT.
[0007]

[Means for solving problem]In order to solve above-mentioned SUBJECT, in the invention in this application, the following technical means are provided fundamentally. Namely, in the display type slot machine in which invention indicated to the claim of the application concerned displays the rolling state of two or more reels on a display with a background image, The reel control information generating means which generates rotation and stop information of two or more virtual reels, It is characterized by having a display control means displayed on a display combining an image control means to generate a reel picture signal and a background image signal according to the reel control information from the above-mentioned reel control information generating means, and the above-mentioned reel picture signal and the above-mentioned background image signal.

[0008]Invention indicated to Claim 2 of the application concerned is the control method of a display type slot machine of displaying the rolling state of two or more reels on a display with a background image, While generating the both sides of a reel picture signal and a background image signal according to the reel control information from the reel control information generating means which generates rotation and stop information of two or more virtual reels, It is characterized by displaying on a display combining these reels picture signal and a background image signal.

[0009]

[Function and Effect of the Invention]For example, when displaying so that it may have three reels which have the numbers from zero to nine as a rotational display character, a reel control information generating means, By using random number generation equipment at the game start time, it determines whether to display which number eventually and to stop each reel, and this information is transmitted to an image control means. As the technique of this transmission, the information that all the reels are rotated is transmitted first, for example, it ranks second and the information that the 1st, 2nd, and 3rd reels are stopped one by one is transmitted. If information that all the reels are rotated is received, an image control means will generate the background image signal which suits this state while generating the picture signal showing the state where three reels are rotating. A display control means is displayed on a display combining each above-mentioned picture signal.

[0010]Subsequently, if a signal that the 1st reel is stopped is received, an image control means will reduce speed gradually, will rotate only the 1st reel, and will generate a reel picture signal which the number decided beforehand eventually is displayed and stops one by one. Simultaneously with it, the background image signal which suits this state is generated, and a display control means displays on a display combining these reels picture signal and a background image signal.

[0011]When similarly the signal "stop the 2nd reel" is received, an image control means, reducing the revolving speed of the 2nd reel gradually — soon — this 2nd reel — oh, at the same time it generates a reel picture signal which displays a ** arrangement **** number and stops, The background image signal which suited this situation is generated, and a display control means is displayed on a display combining these picture signals.

[0012]In the state where the 1st and 2nd reels stopped as mentioned above in the desirable embodiment, The number displayed on the 2nd reel is the same as the number displayed on the 1st reel, When it is in the state which is "becoming it a great success" when the 3rd reel stops in the same number, i.e., "reach" state, For example, it differs rotational display control of the 3rd reel from the usual rotational display control, he is trying to generate a reel picture signal which stops a reel gradually in a mode in which a hope is made to hold more to a player. It combines with this, a background image signal which advertizes such a reach condition more visually is generated, and a display control means is displayed on a display combining this reel picture signal and background image signal.

[0013]Thus, in the invention in this application, since a reel picture signal and a background image signal are individually generated according to the reel control information from a reel control information generating means, The background image relevant to a motion of the reel picture on a display can be expressed now, and it becomes possible to increase more more nearly visual fun and the fun of the slot machine as a game taking advantage of the advantage in the case of constituting a slot machine at a display ceremony to the maximum extent.

[0014]The other features and operation effects of the invention in this application will become clear from the detailed explanation given below with reference to an accompanying drawing.

[0015]

[Example]Drawing 7 expresses one scene of the display screen of a display type slot machine where the invention in this application is applied. Three numbers are displayed on the lower region of the display. These numbers show the state where the number on 1st reel R₁, the number on 2nd reel R₂, and the number on 3rd reel R₃ were displayed, sequentially from the left. When all the reels are in a rolling state, the number arranged in predetermined order will appear in a predetermined viewing area one by one so that it may flow downward, for example from a top.

[0016]The background image is expressed behind three numbers expressed as mentioned above. This background image is expressed with the example explained below as what imitated the game of woman professional wrestling.

[0017]For example, if a pachinko ball wins a prize of a predetermined start gate when applying the slot machine of the invention in this application to a pachinko machine, a slot machine will start. And in the state where all the 3 reels stopped, as shown in "7", "7", and "7", when three numbers which appear in a halt condition gather, the following control techniques are explained as what is "becoming it a great success." In a pachinko machine, when it is described above "great success", it enables the bonus gate arranged in the field of a pachinko stand to win a prize of predetermined time or the bonus gate which carries out prescribed frequency rotation and requires many pachinko balls.

[0018]Drawing 1 is a block diagram showing roughly the composition of the display type slot machine of the invention in this application. The mark 1 expresses the reel control information generating means. This reel control information generating means 1 can be grasped as a thing with the following functions. That is, when the above-mentioned pachinko ball wins a prize of a start gate, it determines whether to display which number and to stop each reel eventually, by rotating 3 virtual reel R₁, R₂, and R₃, and using a random number generation means. And the instructions for carrying out the stop operation of the reel picture are sent to order one by one, for example from left-hand side 1st reel R₁.

[0019]An image control means by which it is expressed with the mark 2 in drawing 1 is provided with the function to perform generation of a reel picture, and generation of a background image, according to the control command from the above-mentioned reel control information generating means 1. Each of these reels pictures and background images is generated as an animation. It is carried out by calling the still picture accumulated in the image memory which is not illustrated as the generation technique of such an animation in the given order.

[0020]Thus, as shown in drawing 7, it combines and is displayed on the predetermined field on display screen D as the reel picture separately generated by an image control means, and a background image by the display control means 3.

[0021]As shown in drawing 7, display hereafter a motion of the number which imitated three reels R₁, R₂, and R₃ on the lower region on a display screen, and as a background, About the case where the scene on the ring of woman professional wrestling is displayed, the example of control which the described image control means 2 performs is explained, referring to the table of drawing 2 thru/or

the flow chart of drawing 4, drawing 5, and drawing 6.

[0022]As mentioned above, a slot machine is started, for example, when a pachinko ball passes through a start gate. It waits for the directions "rotate all the reels from the reel control information generating means 1", after initial value setting (Step 001) (Step 002). If there are these directions (it is YES at Step 002), reel image generation routine ** and background image generating routine ** will be started (Step 003 and Step 004). In this example, reel image generation routine ** generates all the reel rotational images, as shown in drawing 5. That is, the picture which all the reels are rotating is generated. the above-mentioned background image generating routine ** is shown in drawing 6 — as — the time of all the reel rotations — business — a background image is generated. In the case of this example, the picture which is working, for example so that two wrestlers may apply work to a partner wrestler on a ring is generated.

[0023]During execution of such reel image generation routine ** and background image generating routine **, If it is in the state waiting for the 1st reel stop operation directions from the reel control information generating means 1 (Step 005) and there are 1st reel stop operation directions (it is YES at Step 005), reel image generation routine ** and background image generating routine ** will be performed (Steps 006 and 007). Reel image generation routine ** generates the picture to which stop operation only of the 1st reel R₁ is carried out, maintaining 2nd reel R₂ and 3rd reel R₃ to a rolling state. As mentioned above, the information on whether express which number eventually and this 1st reel R₁ is stopped is also included in the 1st reel stop operation directions information.

Reducing the revolving speed, a predetermined number is displayed eventually and, specifically, 1st reel R₁ stops.

[0024]On the other hand, background image generating routine ** generates the background image for the 1st reel stop operation, concrete — the time of all the above-mentioned reel rotations — business — the picture in the state where the motion of the wrestler on a ring became white-hot more rather than the background generate time is generated.

[0025]Next, if 1st reel R₁ stops, it will move to the 2nd reel stop operation directions waiting state from the reel control information generating means 1 (Step 008). If there are 2nd reel stop operation directions (it is YES at Step 008), it will shift to execution of reel image generation routine ** and background image generating routine ** (Step 009 and Step 010).

[0026]This reel image generation routine ** generates the picture which 2nd reel R₂ reduces revolving speed gradually, and stops, while 1st reel R₁ stopped and 3rd reel R₃ had maintained the rolling state.

[0027]On the other hand, background image generating routine ** generates the background image of business at the time of the 2nd reel stop operation. For example, while two wrestlers on a ring negotiate about work, the time of 2nd reel R₂ stopping eventually and timing are doubled, and the picture that the work which one wrestler hung on the wrestler of another side is decided is generated.

[0028]If 2nd reel R₂ stops as mentioned above, it will be in the state waiting for the 3rd reel stop operation directions from the above-mentioned reel control information generating means (Step 010). If there are 3rd reel stop operation directions (it is YES in Step 010), it will be judged whether it is a reach condition (Step 011). if the number of 1st reel R₁ already stopped as it was indicated, for example in drawing 8 as a reach condition, and 2nd reel R₂ has gathered here and the number of 3rd reel R₃ gathers, it is the one-step this side which will be in the state of "great success" where all the numbers gathered — a thing meaning is carried out.

[0029]That is, when it stops to 1st reel R₁ and 2nd reel R₂, he follows for whether being a reach condition and is trying to change the reel picture and background image for stopping 3rd reel R₃ in

this example.

[0030]In not being a reach condition, in the (step 011, it shifts to execution of NO) and reel image generation routine ** and background image generating routine ** (Step 012 and Step 013). Reel image generation routine ** is the 3rd reel stop operation image generation routine at the time of non reach, as mentioned above.

3rd reel R₃ reduces [if / 1st reel R₁ or 2nd reel R₂ is stopped] the revolving speed gradually in a similar manner, and the picture of displaying a predetermined number and stopping soon is generated.

[0031]on the other hand -- background image generating routine ** -- the time of non reach -- the time of the 3rd reel stop operation -- business -- a background image is generated.

When it stops to 2nd reel R₂ as mentioned above, the work which one wrestler hung on the wrestler of another side in the background is solved, and the background image of working so that two wrestlers may move about on a ring and may hang work on a partner again is generated.

[0032]A game is completed, when it was not a reach condition in Step 011, and there is already no possibility of "great success" and 3rd reel R₃ stopped through Step 012 and Step 013.

[0033]On the other hand, in Step 011, if judged with it being a reach condition, in the (step 011, it will shift to execution of YES) and reel image generation routine ** and background image generating routine ** (Step 014 and Step 015). Reel image generation routine ** is the 3rd reel stop operation image generation routine at the time of reach.

background image generating routine ** -- the time of reach -- the time of the 3rd reel stop operation -- business -- it is a background image generating routine.

[0034]In this example, reel image generation routine ** and the background image generating routine ** operate as follows. That is, in reel image generation routine **, rotation of 3rd reel R₃ lowers the speed more slowly. On the other hand, in a background, the wrestler who hung work makes the wrestler of another side a hole state, a referee appears on a ring after that, and while performing a call with "one", a "two", and "three", the operation is performed. And at this time, according to a call with the above-mentioned referee's "one", a "two", and "three", and timing of operation, 3rd reel R₃ to which revolving speed became slow performs the last three number change displays, and 3rd reel R₃ suspends rotation according to a call with the above "three."

[0035]In this way, after a reach condition is completed (it is YES in Step 016), It is judged whether it is "great success" (Step 017), and in being "great success", it shifts to execution of YES) and reel image generation routine ** and background image generating routine ** at the (step 017 (Step 018 and Step 019). this reel image generation routine ** -- the time of great success -- business -- it is a reel image generation routine.

For example, the picture that three equal numbers increase brightness all at once, and blink is generated, and, on the other hand, the picture that the referee is flattering high right-hand man of the wrestler who became a fall victory is generated by background image generating routine ** as it appears in drawing 9.

[0036]When it is not great success (it is NO at Step 017), a game may be terminated as it is, but it is also interesting to continue the following steps, for example. Namely, in the information transmitted from the reel control information generating means 1, When the case where re-reach directions are included is set up and there are re-reach directions, at the (step 020 YES). If it will be in the state waiting for the 3rd reel re rotation directions (Step 021) and there are 3rd reel R₃ re rotation directions (it is YES at Step 021), it will shift to execution of reel image generation routine

** and background image generating routine ** (Step 022 and Step 023).

[0037]Reel image generation routine ** is a routine which generates the picture which rotates again 3rd reel R₃ finally stopped once. The pinned wrestler dispels the hole state and background image generating routine ** generates the picture of coming to work a ring top again.

[0038]In this way, if 3rd reel R₃ will be in a re rotation state, it will be in the state waiting for the 3rd reel stop operation directions from the reel control information generating means 1 (Step 024). If there are 3rd reel stop operation directions (it is YES at Step 024), it will shift to execution of reel image generation routine ** and background image generating routine ** (Step 025 and Step 026). This reel image generation routine ** is the 3rd reel stop operation image generation routine at the time of reach.

background image generating routine ** — the time of reach — the time of the 3rd reel stop operation — business — it is a background image generating routine and is as having already mentioned above about this.

[0039]In this way, if 3rd reel R₃ stops again, it will be judged whether it is "great success" (Step 027). In being "great success", it shifts to execution of YES) and reel image generation routine ** and background image generating routine ** at the (step 027 (Step 028 and Step 029). This reel image generation routine ** and background image generating routine ** are also as having already mentioned above.

[0040]As explained above, a slot machine and a method for controlling the same of the invention in this application, Since a reel picture and a background image are generated separately, it combines with this according to the information from the reel control information generating means 1 and he is trying to display on a display, according to the rotation stopped state of the reel of a slot machine, a background image can be constituted suitably. As a result, while visual fun increases further, the game nature as a slot machine also improves further.

[0041]And the meaning of generating a background image according to a reel picture, For example, as mentioned above, it means that it was able to be said that it was made to synchronize with the picture showing countdown of the hole state by a referee, and its situation, and 3rd reel R₃ which is a last reel was changed gradually.

From the above-mentioned embodiment, the improvement in the game nature by the invention in this application and visual enjoyment will be understood.

[0042]Of course, the range of the invention in this application is not limited to the embodiment mentioned above, and various setting out is possible for the mode of a reel picture, and the mode of a background image.

[0043]Although the reels which appear on a DISU rep lei in the embodiment mentioned above are three reels, the 1st, the 2nd, and the 3rd, they can also set up the number of this reel freely.

[0044]The display type slot machine of the invention in this application is incorporable as a functional part of a pachinko machine, and also can be constituted also as a medal-type special-purpose machine.

[0045]Of course, the display is possible also for using CRT besides sized displays, such as an electrochromatic display display panel, etc.

[0046]In addition, although it did not explain special in the above, usually the sound corresponding to a reel picture and/or a background image is outputted by a publicly known technique.

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TECHNICAL FIELD

[Industrial Application]The invention in this application relates to the technology of imitating two or more rotation reels and displaying characters, such as a number, with a background image, for example on a liquid crystal display, in detail about a display type slot machine and a method for controlling the same.

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PRIOR ART

[Description of the Prior Art]3 thru/or 5 reels which equip a periphery with the annular strip to which the traditional mechanical slot machine expressed characters, such as a number and a pictorial device, are installed behind the display window side by side, for example. And after it answers a start signal and all the reels rotate, stop input operation is answered automatically. When a reel stops one by one and all the reels stop, a predetermined prize is awarded to a player with the combination of the character which has appeared in the above-mentioned display window. It is usual that the above-mentioned prize repays the medal of a specified number in a medal-type slot machine according to the size of a prize.

[0003]These days, if the pachinko incorporating the above slot machines is also provided and a pachinko ball wins prize of a fixed start gate in this case, a slot machine will start. In this case, as for the prize awarded with the combination of the character of each reel in the time of a reel stop, it is common predetermined time or to carry out prescribed frequency rotation in the large-sized bonus gate where a pachinko ball wins a prize easily. This kind of slot machine is usually "becoming it a great success", for example, when the same number or character is located in a line like "BAR", "BAR", and "BAR", "7", "7", "7", and.

[0004]By the way, from small and highly efficient display devices, such as an electrochromatic display display device, having come to be provided inexpensive these days. It replaced with the above mechanical slot machines, and it has resulted so that many display-type slot machines which displayed the picture which imitated the rolling state of two or more reels on the above-mentioned display may be used. According to the such display-type slot machine, since rotational display characters and background display images, such as a reel, can be set up freely, there is an advantage that visual fun can be raised.

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EFFECT OF THE INVENTION

[Function and Effect of the Invention]For example, when displaying so that it may have three reels which have the numbers from zero to nine as a rotational display character, a reel control information generating means, By using random number generation equipment at the game start time, it determines whether to display which number eventually and to stop each reel, and this information is transmitted to an image control means. As the technique of this transmission, the information that all the reels are rotated is transmitted first, for example, it ranks second and the information that the 1st, 2nd, and 3rd reels are stopped one by one is transmitted. If information that all the reels are rotated is received, an image control means will generate the background image signal which suits this state while generating the picture signal showing the state where three reels are rotating. A display control means is displayed on a display combining each above-mentioned picture signal.

[0010]Subsequently, if a signal that the 1st reel is stopped is received, an image control means will reduce speed gradually, will rotate only the 1st reel, and will generate a reel picture signal which the number decided beforehand eventually is displayed and stops one by one. Simultaneously with it, the background image signal which suits this state is generated, and a display control means displays on a display combining these reels picture signal and a background image signal.

[0011]When similarly the signal "stop the 2nd reel" is received, an image control means, reducing the revolving speed of the 2nd reel gradually — soon — this 2nd reel — oh, at the same time it generates a reel picture signal which displays a ** arrangement **** number and stops. The background image signal which suited this situation is generated, and a display control means is displayed on a display combining these picture signals.

[0012]In the state where the 1st and 2nd reels stopped as mentioned above in the desirable embodiment, The number displayed on the 2nd reel is the same as the number displayed on the 1st reel, When it is in the state which is "becoming it a great success" when the 3rd reel stops in the same number, i.e., "reach" state, For example, it differs rotational display control of the 3rd reel from the usual rotational display control, he is trying to generate a reel picture signal which stops a reel gradually in a mode in which a hope is made to hold more to a player. It combines with this, a background image signal which advertizes such a reach condition more visually is generated, and a display control means is displayed on a display combining this reel picture signal and background image signal.

[0013]Thus, in the invention in this application, since a reel picture signal and a background image signal are individually generated according to the reel control information from a reel control information generating means, The background image relevant to a motion of the reel picture on a display can be expressed now, and it becomes possible to increase more more nearly visual fun and the fun of the slot machine as a game taking advantage of the advantage in the case of constituting a slot machine at a display ceremony to the maximum extent.

[0014]The other features and operation effects of the invention in this application will become clear

from the detailed explanation given to below with reference to an accompanying drawing.

[0015]

[Example] Drawing 7 expresses one scene of the display screen of a display type slot machine where the invention in this application is applied. Three numbers are displayed on the lower region of the display. These numbers show the state where the number on 1st reel R₁, the number on 2nd reel R₂, and the number on 3rd reel R₃ were displayed, sequentially from the left. When all the reels are in a rolling state, the number arranged in predetermined order will appear in a predetermined viewing area one by one so that it may flow downward, for example from a top.

[0016] The background image is expressed behind three numbers expressed as mentioned above. This background image is expressed with the example explained below as what imitated the game of woman professional wrestling.

[0017] For example, if a pachinko ball wins a prize of a predetermined start gate when applying the slot machine of the invention in this application to a pachinko machine, a slot machine will start. And in the state where all the 3 reels stopped, as shown in "7", "7", and "7", when three numbers which appear in a halt condition gather, the following control techniques are explained as what is "becoming it a great success." In a pachinko machine, when it is described above "great success", it enables the bonus gate arranged in the field of a pachinko stand to win a prize of predetermined time or the bonus gate which carries out prescribed frequency rotation and requires many pachinko balls.

[0018] Drawing 1 is a block diagram showing roughly the composition of the display type slot machine of the invention in this application. The mark 1 expresses the reel control information generating means. This reel control information generating means 1 can be grasped as a thing with the following functions. That is, when the above-mentioned pachinko ball wins a prize of a start gate, it determines whether to display which number and to stop each reel eventually, by rotating 3 virtual reel R₁, R₂, and R₃, and using a random number generation means. And the instructions for carrying out the stop operation of the reel picture are sent to order one by one, for example from left-hand side 1st reel R₁.

[0019] An image control means by which it is expressed with the mark 2 in drawing 1 is provided with the function to perform generation of a reel picture, and generation of a background image, according to the control command from the above-mentioned reel control information generating means 1. Each of these reels pictures and background images is generated as an animation. It is carried out by calling the still picture accumulated in the image memory which is not illustrated as the generation technique of such an animation in the given order.

[0020] Thus, as shown in drawing 7, it combines and is displayed on the predetermined field on display screen D as the reel picture separately generated by an image control means, and a background image by the display control means 3.

[0021] As shown in drawing 7, display hereafter a motion of the number which imitated three reels R₁, R₂, and R₃ on the lower region on a display screen, and as a background, About the case where the scene on the ring of woman professional wrestling is displayed, the example of control which the described image control means 2 performs is explained, referring to the table of drawing 2 thru/or the flow chart of drawing 4, drawing 5, and drawing 6.

[0022] As mentioned above, a slot machine is started, for example, when a pachinko ball passes through a start gate. It waits for the directions "rotate all the reels from the reel control information generating means 1", after initial value setting (Step 001) (Step 002). If there are these directions (it is YES at Step 002), reel image generation routine ** and background image generating routine ** will be started (Step 003 and Step 004). In this example, reel image generation routine ** generates all the reel rotational images, as shown in drawing 5. That is, the picture which all the reels are

rotating is generated. the above-mentioned background image generating routine ** is shown in drawing 6 — as — the time of all the reel rotations — business — a background image is generated. In the case of this example, the picture which is working, for example so that two wrestlers may apply work to a partner wrestler on a ring is generated.

[0023]During execution of such reel image generation routine ** and background image generating routine **, If it is in the state waiting for the 1st reel stop operation directions from the reel control information generating means 1 (Step 005) and there are 1st reel stop operation directions (it is YES at Step 005), reel image generation routine ** and background image generating routine ** will be performed (Steps 006 and 007). Reel image generation routine ** generates the picture to which stop operation only of the 1st reel R₁ is carried out, maintaining 2nd reel R₂ and 3rd reel R₃ to a rolling state. As mentioned above, the information on whether express which number eventually and this 1st reel R₁ is stopped is also included in the 1st reel stop operation directions information.

Reducing the revolving speed, a predetermined number is displayed eventually and, specifically, 1st reel R₁ stops.

[0024]On the other hand, background image generating routine ** generates the background image for the 1st reel stop operation. concrete — the time of all the above-mentioned reel rotations — business — the picture in the state where the motion of the wrestler on a ring became white-hot more rather than the background generate time is generated.

[0025]Next, if 1st reel R₁ stops, it will move to the 2nd reel stop operation directions waiting state from the reel control information generating means 1 (Step 008). If there are 2nd reel stop operation directions (it is YES at Step 008), it will shift to execution of reel image generation routine ** and background image generating routine ** (Step 009 and Step 010).

[0026]This reel image generation routine ** generates the picture which 2nd reel R₂ reduces revolving speed gradually, and stops, while 1st reel R₁ stopped and 3rd reel R₃ had maintained the rolling state.

[0027]On the other hand, background image generating routine ** generates the background image of business at the time of the 2nd reel stop operation. For example, while two wrestlers on a ring negotiate about work, the time of 2nd reel R₂ stopping eventually and timing are doubled, and the picture that the work which one wrestler hung on the wrestler of another side is decided is generated.

[0028]If 2nd reel R₂ stops as mentioned above, it will be in the state waiting for the 3rd reel stop operation directions from the above-mentioned reel control information generating means (Step 010). If there are 3rd reel stop operation directions (it is YES in Step 010), it will be judged whether it is a reach condition (Step 011). if the number of 1st reel R₁ already stopped as it was indicated, for example in drawing 8 as a reach condition, and 2nd reel R₂ has gathered here and the number of 3rd reel R₃ gathers, it is the one-step this side which will be in the state of "great success" where all the numbers gathered — a thing meaning is carried out.

[0029]That is, when it stops to 1st reel R₁ and 2nd reel R₂, he follows for whether being a reach condition and is trying to change the reel picture and background image for stopping 3rd reel R₃ in this example.

[0030]In not being a reach condition, in the (step 011, it shifts to execution of NO) and reel image generation routine ** and background image generating routine ** (Step 012 and Step 013). Reel image generation routine ** is the 3rd reel stop operation image generation routine at the time of non reach, as mentioned above.

3rd reel R₃ reduces [if / 1st reel R₁ or 2nd reel R₂ is stopped] the revolving speed gradually in a similar manner, and the picture of displaying a predetermined number and stopping soon is

generated.

[0031]on the other hand — background image generating routine ** — the time of non reach — the time of the 3rd reel stop operation — business — a background image is generated.

When it stops to 2nd reel R₂ as mentioned above, the work which one wrestler hung on the wrestler of another side in the background is solved, and the background image of working so that two wrestlers may move about on a ring and may hang work on a partner again is generated.

[0032]A game is completed, when it was not a reach condition in Step 011, and there is already no possibility of "great success" and 3rd reel R₃ stopped through Step 012 and Step 013.

[0033]On the other hand, in Step 011, if judged with it being a reach condition, in the (step 011, it will shift to execution of YES) and reel image generation routine ** and background image generating routine ** (Step 014 and Step 015). Reel image generation routine ** is the 3rd reel stop operation image generation routine at the time of reach.

background image generating routine ** — the time of reach — the time of the 3rd reel stop operation — business — it is a background image generating routine.

[0034]In this example, reel image generation routine ** and the background image generating routine ** operate as follows. That is, in reel image generation routine **, rotation of 3rd reel R₃ lowers the speed more slowly. On the other hand, in a background, the wrestler who hung work makes the wrestler of another side a hole state, a referee appears on a ring after that, and while performing a call with "one", a "two", and "three", the operation is performed. And at this time, according to a call with the above-mentioned referee's "one", a "two", and "three", and timing of operation, 3rd reel R₃ to which revolving speed became slow performs the last three number change displays, and 3rd reel R₃ suspends rotation according to a call with the above "three."

[0035]In this way, after a reach condition is completed (it is YES in Step 016), It is judged whether it is "great success" (Step 017), and in being "great success", it shifts to execution of YES) and reel image generation routine ** and background image generating routine ** at the (step 017 (Step 018 and Step 019). this reel image generation routine ** — the time of great success — business — it is a reel image generation routine.

For example, the picture that three equal numbers increase brightness all at once, and blink is generated, and, on the other hand, the picture that the referee is flattering high right-hand man of the wrestler who became a fall victory is generated by background image generating routine ** as it appears in drawing 9.

[0036]When it is not great success (it is NO at Step 017), a game may be terminated as it is, but it is also interesting to continue the following steps, for example. Namely, in the information transmitted from the reel control information generating means 1, When the case where re-reach directions are included is set up and there are re-reach directions, at the (step 020 YES), If it will be in the state waiting for the 3rd reel re rotation directions (Step 021) and there are 3rd reel R₃ re rotation directions (it is YES at Step 021), it will shift to execution of reel image generation routine ** and background image generating routine ** (Step 022 and Step 023).

[0037]Reel image generation routine ** is a routine which generates the picture which rotates again 3rd reel R₃ finally stopped once. The pinned wrestler dispels the hole state and background image generating routine ** generates the picture of coming to work a ring top again.

[0038]In this way, if 3rd reel R₃ will be in a re rotation state, it will be in the state waiting for the 3rd reel stop operation directions from the reel control information generating means 1 (Step 024), If

there are 3rd reel stop operation directions (it is YES at Step 024), it will shift to execution of reel image generation routine ** and background image generating routine ** (Step 025 and Step 026). This reel image generation routine ** is the 3rd reel stop operation image generation routine at the time of reach.

background image generating routine ** — the time of reach — the time of the 3rd reel stop operation — business — it is a background image generating routine and is as having already mentioned above about this.

[0039]In this way, if 3rd reel R₃ stops again, it will be judged whether it is "great success" (Step 027), In being "great success", it shifts to execution of YES) and reel image generation routine ** and background image generating routine ** at the (step 027 (Step 028 and Step 029). This reel image generation routine ** and background image generating routine ** are also as having already mentioned above.

[0040]As explained above, a slot machine and a method for controlling the same of the invention in this application, Since a reel picture and a background image are generated separately, it combines with this according to the information from the reel control information generating means 1 and he is trying to display on a display, according to the rotation stopped state of the reel of a slot machine, a background image can be constituted suitably. As a result, while visual fun increases further, the game nature as a slot machine also improves further.

[0041]And the meaning of generating a background image according to a reel picture, For example, as mentioned above, it means that it was able to be said that it was made to synchronize with the picture showing countdown of the hole state by a referee, and its situation, and 3rd reel R₃ which is a last reel was changed gradually.

From the above-mentioned embodiment, the improvement in the game nature by the invention in this application and visual enjoyment will be understood.

[0042]Of course, the range of the invention in this application is not limited to the embodiment mentioned above, and various setting out is possible for the mode of a reel picture, and the mode of a background image.

[0043]Although the reels which appear on a DISU rep lei in the embodiment mentioned above are three reels, the 1st, the 2nd, and the 3rd, they can also set up the number of this reel freely.

[0044]The display type slot machine of the invention in this application is incorporable as a functional part of a pachinko machine, and also can be constituted also as a medal-type special-purpose machine.

[0045]Of course, the display is possible also for using CRT besides sized displays, such as an electrochromatic display display panel, etc.

[0046]In addition, although it did not explain special in the above, usually the sound corresponding to a reel picture and/or a background image is outputted by a publicly known technique.

[Translation done.]

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TECHNICAL PROBLEM

[Problem to be solved by the invention]However, an old display type slot machine, Although there is flexibility of a background display, it is most which indicated the main proposal the number doubling character which imitated two or more rotation reels to the last, or picture doubling KYARAKU, The rolling state of a reel remains to such an extent that it performs an animation background display independently, and it cannot say that the advantage in the case of constituting a slot machine at a display ceremony is employed efficiently.

[0006]In [the invention in this application is invented under the above-mentioned circumstances, and] a display type slot machine, For example, while increasing more nearly visual fun by relating a rotation reel display and a background display mutually according to the state of a rotation reel, it is making enabling it to increase the interest of the slot machine as a game more into the SUBJECT.

[Translation done.]

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MEANS

[Means for solving problem]In order to solve above-mentioned SUBJECT, in the invention in this application, the following technical means are provided fundamentally. Namely, in the display type slot machine in which invention indicated to the claim of the application concerned displays the rolling state of two or more reels on a display with a background image, The reel control information generating means which generates rotation and stop information of two or more virtual reels, It is characterized by having a display control means displayed on a display combining an image control means to generate a reel picture signal and a background image signal according to the reel control information from the above-mentioned reel control information generating means, and the above-mentioned reel picture signal and the above-mentioned background image signal.

[0008]Invention indicated to Claim 2 of the application concerned is the control method of a display type slot machine of displaying the rolling state of two or more reels on a display with a background image, While generating the both sides of a reel picture signal and a background image signal according to the reel control information from the reel control information generating means which generates rotation and stop information of two or more virtual reels, It is characterized by displaying on a display combining these reels picture signal and a background image signal.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

Drawing 1It is a control block diagram of one embodiment of the slot machine of the invention in this application.

Drawing 2It is a flow chart which shows an example of the control method of the invention in this application.

Drawing 3It is a flow chart which shows an example of the control method of the invention in this application.

Drawing 4It is a flow chart which shows an example of the control method of the invention in this application.

Drawing 5It is a table showing the contents of each reel image generation routine in drawing 2 - drawing 4.

Drawing 6It is a table showing the contents of each background image generating routine in drawing 2 - drawing 4.

Drawing 7It is a displaying condition explanatory view on a display.

Drawing 8It is a displaying condition explanatory view on a display.

Drawing 9It is a displaying condition explanatory view on a display.

[Explanations of letters or numerals]

1 Reel information creating means

2 Image control means

3 Display control means

D Display

The R₁ 1st reel

The R₂ 2nd reel

The R₂ 3rd reel

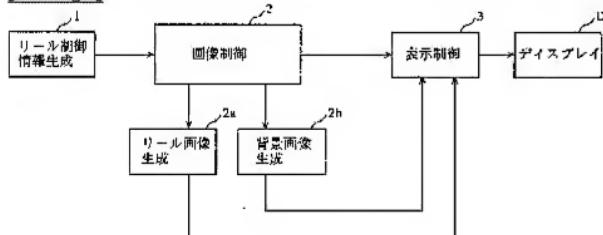
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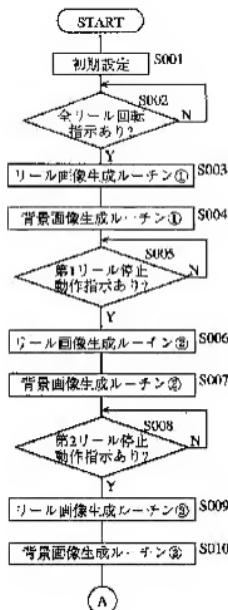
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DRAWINGS

[Drawing 1]**[Drawing 2]**

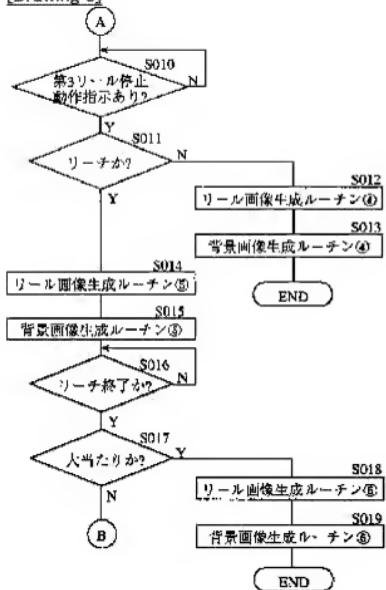


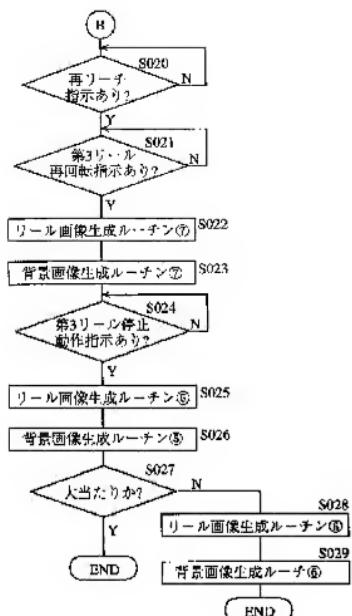
[Drawing 5]

ルーチン名	機能
リール画像生成ルーチン ①	全リール回転用背景画像生成
リール画像生成ルーチン ②	第1リール停止動作用背景画像生成
リール画像生成ルーチン ③	第2リール停止動作用背景画像生成
リール画像生成ルーチン ④	ノン・リード時 第3リール停止動作用背景画像生成
リール画像生成ルーチン ⑤	リード時 第3リール停止動作用背景画像生成
リール画像生成ルーチン ⑥	大当たり時用リール画像生成
リール画像生成ルーチン ⑦	第3リール再回転用背景画像生成

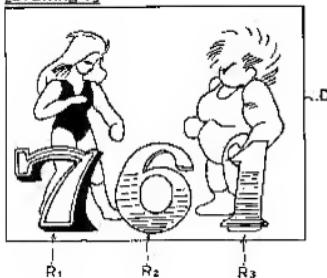
[Drawing 6]

ルーチン名	機能
背景画像生成ルーチン ①	全リール回転時用背景画像生成
背景画像生成ルーチン ②	第1リール停止動作時用背景画像生成
背景画像生成ルーチン ③	第2リール停止動作時用背景画像生成
背景画像生成ルーチン ④	ノン・リード時 第3リール停止動作時用背景画像生成
背景画像生成ルーチン ⑤	リード時 第3リール停止動作時用背景画像生成
背景画像生成ルーチン ⑥	大当たり時用背景画像生成
背景画像生成ルーチン ⑦	第3リール再回転時用背景画像生成

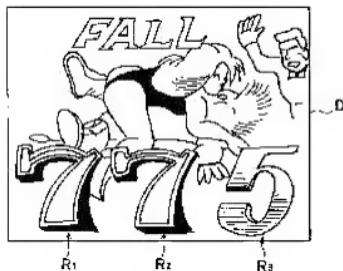
[Drawing 3][Drawing 4]



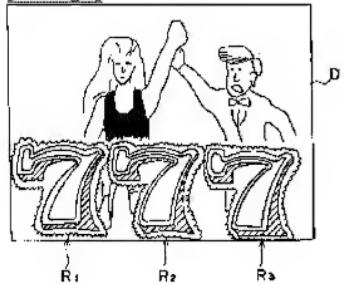
[Drawing 7]



[Drawing 8]



[Drawing 9]



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CORRECTION OR AMENDMENT

[Kind of official gazette]Printing of amendment by regulation of Patent Law Article 17 of 2
 [Section Type] The 2nd Type of the part I gate
 [Publication date]Heisei 13(2001) April 10 (2001.4.10)

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 [Annual volume number] Publication of patent applications 8-104
 [Application number]Japanese Patent Application No. 6-149781
 [The 7th edition of International Patent Classification]

A63F 5/04 511

[F1]

A63F 5/04 511 D

[Written Amendment]

[Filing date]Heisei 12(2000) August 3 (2000.8.3)

[Amendment 1]

[Document to be Amended]Description

[Item(s) to be Amended]0005

[Method of Amendment]Change

[Proposed Amendment]

[0005]

[Problem to be solved by the invention]However, an old display type slot machine, Although there is flexibility of a background display, it is most which indicated the main proposal the number doubling character which imitated two or more rotation reels to the last, or the picture doubling character. The rolling state of a reel remains to such an extent that it performs an animation background display independently, and it cannot say that the advantage in the case of constituting a slot machine at a display ceremony is employed efficiently.

[Amendment 2]

[Document to be Amended]Description

[Item(s) to be Amended]0007

[Method of Amendment]Change

[Proposed Amendment]

[0007]

[Means for solving problem]In order to solve above-mentioned SUBJECT, in the invention in this application, the following technical means are provided fundamentally. Namely, invention indicated to Claim 1 of the application concerned, In the display type slot machine which displays the rolling state of two or more reels on a display with a background image, The reel control information

generating means which generates rotation and stop information of two or more virtual reels, It is characterized by having a display control means displayed on a display combining an image control means to generate a reel picture signal and a background image signal according to the reel control information from the above-mentioned reel control information generating means, and the above-mentioned reel picture signal and the above-mentioned background image signal.

[Amendment 3]

[Document to be Amended]Description

[Item(s) to be Amended]0024

[Method of Amendment]Change

[Proposed Amendment]

[0024]On the other hand, background image generating routine ** generates the background image for the 1st reel stop operation. concrete — the time of all the above-mentioned reel rotations — business — the picture in the state where the motion of the wrestler on a ring became white-hot more rather than the background image generate time is generated.

[Amendment 4]

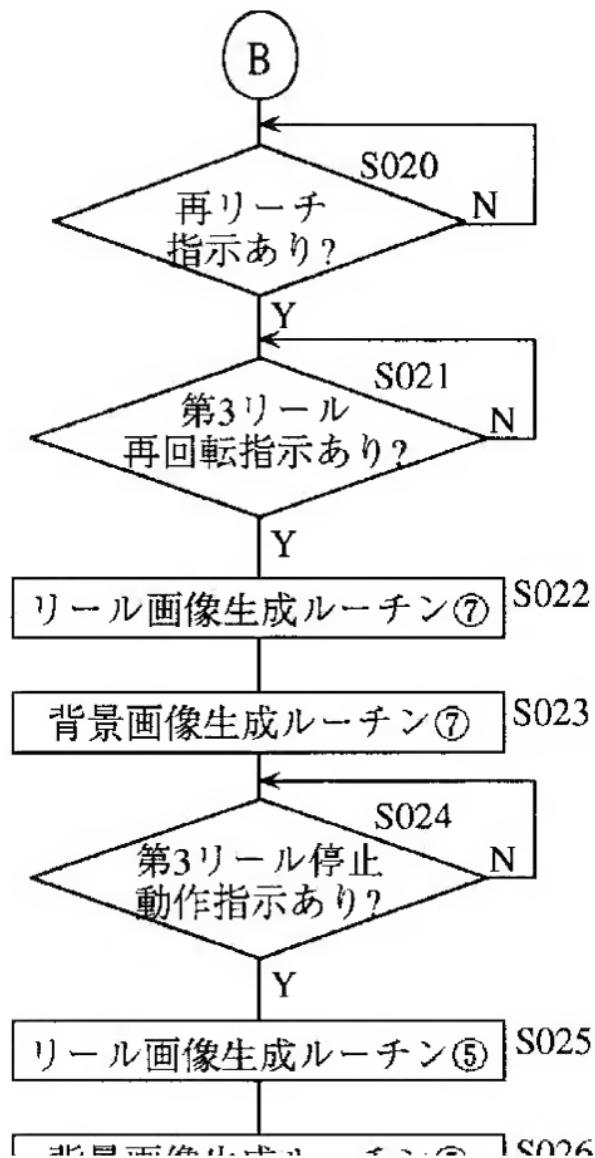
[Document to be Amended]DRAWINGS

[Item(s) to be Amended]Drawing 4

[Method of Amendment]Change

[Proposed Amendment]

[Drawing 4]



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F I

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(71)出願人

000129149
株式会社カブコン

大阪市中央区平野町3丁目1番3号

(72)発明者

秋山 幸平
大阪市中央区大手通1丁目4番12号 株式
会社カブコン内

(72)発明者

岡本 圭介
大阪市中央区大手通1丁目4番12号 株式
会社カブコン内

(74)代理人

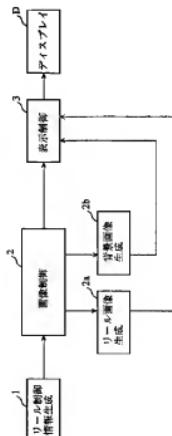
弁理士 吉田 稔 (外2名)

(54)【発明の名称】 ディスプレイ式スロットマシンおよびその制御方法

(57)【要約】

【目的】 ディスプレイ式スロットマシンにおいて、ディスプレイによってリールおよび背景を自由に設定できるとの利点を生かし、さらにこの種のスロットマシンの面白味を高めることを目的とする。

【構成】 複数のリールの回転状態を背景画像とともにディスプレイ上に表示させるディスプレイ式スロットマシンにおいて、複数の仮想リールの回転・停止情報を生成するリール制御情報生成手段1からのリール制御情報をしたがってリール画像信号と背景画像信号の双方を生成するとともに、これらリール画像信号と上記背景画像信号を組合せてディスプレイDに表示するようにした。



【特許請求の範囲】

【請求項1】複数のリールの回転状態を背景画像とともにディスプレイ上に表示させるディスプレイ式スロットマシンにおいて、複数の仮想リールの回転・停止情報を生成するリール制御情報生成手段と、上記リール制御情報生成手段からのリール制御情報をしたがってリール画像信号と背景画像信号とを生成する画像制御手段と、上記リール画像信号と上記背景画像信号とを組合せてディスプレイに表示する表示制御手段とを備えることを特徴とする、ディスプレイ式スロットマシン。

【請求項2】複数のリールの回転状態を背景画像とともにディスプレイ上に表示させるディスプレイ式スロットマシンにおいて、複数の仮想リールの回転・停止情報を生成するリール制御情報生成手段からのリール制御情報をしたがってリール画像信号と背景画像信号の双方を生成するとともに、これらリール画像信号と背景画像信号とを組合せてディスプレイに表示するようにしたことを特徴とする、ディスプレイ式スロットマシンの制御方法。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本願発明は、ディスプレイ式スロットマシンおよびその制御方法に関する、詳しく述べたとえば液晶ディスプレイ上に、背景画像とともに、複数個の回転リールを構成して数字等のキャラクタを表示させる技術に関する。

【0002】

【従来の技術】伝統的な機械式スロットマシンは、数字や動物模様等のキャラクタを表した現状ストリップを外周に備えるリールが表示窓の背後にたとえ3ないし5個並設されている。そして、スタート信号に応答するなどして全てのリールが回転した後、自動的に、あるいは停止入力操作を応答して、リールが順次停止してゆき、全てのリールが停止した時点で上記表示窓に現れているキャラクタの組合せにより、所定の賞がプレーヤーに与えられるようになっている。上記の賞は、メダル式のスロットマシンにおいては、賞の大きさに応じて所定枚数のメダルを払い出すというのが通常である。

【0003】また、最近では、上記のようなスロットマシンを組み込んだパチンコも提供されており、この場合、一定のスタートゲートにパチンコ球が入賞すると、スロットマシンがスタートするようになっている。この場合、リール停止時の各リールのキャラクタの組合せにより与えられる賞は、パチンコ球が容易に入賞しやすい大型のボーナスゲートが所定時間、あるいは所定回数回動するというのが普通である。また、通常、この種のスロットマシンは、たとえば、「7」「7」「7」や、「BAR」「BAR」「BAR」のように同じ数字あるいはキャラクタが並んだ場合に「大当たり」となる。

【0004】ところで、最近では、カラー液晶ディスプレイ装置等の小型、高性能の表示装置が安価に提供されるようになったことから、上記のような機械式のスロットマシンに代え、複数個のリールの回転状態を模した画像を上記ディスプレイ上に表示するようにしたディスプレイ式のスロットマシンが多く用いられるようになっていている。このようなディスプレイ式のスロットマシンによれば、リール等の回転表示キャラクタや背景表示画像を自由に設定できるため、視覚的な面白さを高めることができるという利点がある。

【0005】

【発明を解決しようとする課題】しかしながら、従前のディスプレイ式スロットマシンは、背景表示の自由度があるにかかわらず、あくまでも複数個の回転リールを模した数字合わせキャラクタあるいは組合せキャラクタの表示を主としたものがほとんどであり、リールの回転状態とは無関係に背景表示を行なう程度にとどまっており、スロットマシンをディスプレイ式に構成する場合の利点を生かしていないとはいえないものであった。

【0006】本願発明は、上記した事情のもとで考え出されたものであって、ディスプレイ式スロットマシンにおいて、たとえば、回転リール表示と背景表示とを回転リールの状態によって互いに関連させることにより、より観覧的面白さを増すとともに、ゲームとしてのスロットマシンの興味をより増すことができるようになることをその課題としている。

【0007】

【課題を解決するための手段】上記の課題を解決するため、本願発明では、基本的に、次の技術的手段を講じている。すなわち、本願の請求項に記載した発明は、複数のリールの回転状態を背景画像とともにディスプレイ上に表示させるディスプレイ式スロットマシンにおいて、複数の仮想リールの回転・停止情報を生成するリール制御情報生成手段と、上記リール制御情報生成手段からのリール制御情報をしたがってリール画像信号と背景画像信号とを生成する画像制御手段と、上記リール画像信号と上記背景画像信号とを組合せてディスプレイに表示する表示制御手段とを備えることを特徴としている。

【0008】また、本願の請求項2に記載した発明は、複数のリールの回転状態を背景画像とともにディスプレイ上に表示させるディスプレイ式スロットマシンの制御方法であって、複数の仮想リールの回転・停止情報を生成するリール制御情報生成手段からのリール制御情報をしたがってリール画像信号と背景画像信号の双方を生成するとともに、これらリール画像信号と背景画像信号とを組合せてディスプレイに表示することにしたことを特徴としている。

【0009】

【発明の作用および効果】たとえば、回転表示キャラクタとして0からまでの数字を有するリールを3個有す

るよう表示する場合、リール制御情報生成手段は、ゲームスタート時点において、たとえば乱数発生装置を用いることにより、各リールを最終的にどの数字を表示させて停止するかを決定し、この情報を画面制御手段に送信する。かかる送信の手法としては、たとえば、まず、全てのリールを回転させるという情報を送信し、次いで、第1、第2および第3のリールを順次停止させるという情報を送信する。全てのリールを回転させるとの情報を受け取ると、画像制御手段は、3つのリールが回転している状態を表す画像信号を生成するとともに、この状態に適合する背景画像信号を生成する。表示制御手段は、上記各画像信号を組合せて、ディスプレイ上に表示する。

【0010】次いで、第1のリールを停止すると信号を受け取ると、画像制御手段は、第1のリールのみを次第に速度を落として回転させ、最終的にあらかじめ決められた数字が表示されて停止するようなリール画像信号を逐次生成する。それと同時に、かかる状態に適合する背景画像信号を生成し、表示制御手段が、これらリール画像信号と背景画像信号とを組み合わせてディスプレイに表示する。

【0011】同様に、第2のリールを停止させよとの信号を受け取ると、画像制御手段は、第2のリールの回転速度を次第に低下させ、やがてこの第2のリールがあらかじめ決められた数字を表示して停止するようなリール画像信号を生成すると同時に、この状況に適合した背景画像信号を生成し、表示制御手段は、これら画像信号を組合せてディスプレイ上に表示する。

【0012】好ましい実施例においては、上記のようにして第1および第2のリールが停止した状態において、第1のリールに表示される数字と、第2のリールに表示される数字が同じであり、もし第3のリールが同じ数字で停止した場合には「大当たり」となる状態、すなわち、「リーチ」状態となった場合には、第3のリールの回転表示制御は、通常の回転表示制御とは異なる、たとえばアーベーグに対してより期待感を抱かせるような態様においてリールを次第に停止させるようなリール画像信号を生成するようにしている。これに併せて、このようなリーチ状態を視覚的によりアピールするような背景画像信号が生成され、表示制御手段は、かかるリール画像信号と背景画像信号とを組合せてディスプレイ上に表示する。

【0013】このように、本願発明においては、リール制御情報生成手段からのリール制御情報にしたがって、リール画像信号と背景画像信号とが個別に生成されるので、ディスプレイ上のリール画像の動きに適応した背景画像を表すことができるようになり、スロットマシンをディスプレイ方に構成する場合の利点を最大限に生かして、より視覚的な面白さと、ゲームとしてのスロットマシンの面白さをより増大させることが可能となる。

【0014】本願発明のその他の特徴および作用効果は、添付図面を参照して以下に行う詳細な説明から明らかとなろう。

【0015】

【実施例の説明】図7は、本願発明が適用されるディスプレイ式スロットマシンの表示画面の一場面を示している。ディスプレイの下部領域には、3つの数字が表示されている。これらの数字は、左から順に、第1リールR₁上の数字、第2リールR₂上の数字、および第3リールR₃上の数字が表示された状態を示している。全てのリールが回転状態にあるときは、所定の順に配置された数字群が、たとえば上から下へ流れるように順次所定の表示領域に表れることになる。

【0016】上記のようにして表される3つの数字の背後には、背景画像が表示されている。以下に説明する例では、この背景画像は、女子プロレスの試合を模したものとして表される。

【0017】たとえば、本願発明のスロットマシンをバチンコ機に適用する場合、バチンコ球が所定のスタートゲートに入賞すると、スロットマシンがスタートする。そして、3つリールの全てが停止した状態において、「7」「7」「7」のように、停止状態で表れる3つの数字が並んだ場合に「大当たり」となるものとして、以下の制御手法の説明を行つ。なお、バチンコ機において、上記「大当たり」となった場合、バチンコ台のフィード内に配置されるボーナスゲートが所定時間、あるいは所定回数動じ、多数個のバチンコ球がかかるボーナスゲートに入賞することが可能となる。

【0018】図1は、本願発明のディスプレイ式スロットマシンの構成を概略的に示すブロック図である。符号1は、リール制御情報生成手段を表している。このリール制御情報生成手段1は、次のような機能をもつものとして把握することができる。すなわち、上記バチンコ球がスタートゲートに入賞した場合に、3つ仮想リールR₁、R₂、R₃を回転させ、乱数発生手段1を利用する等して、最終的に、どの数字を表示して各リールを停止させるかを決定する。そして、たとえば左側の第1リールR₁から順に、リール画像を停止作動させるための指令を順次発信する。

【0019】図1において符号2で表される画像制御手段は、上記リール制御情報生成手段1からの制御指令にしたがって、リール画像の生成と、背景画像の生成を行う機能を備える。これらリール画像と背景画像は、いずれも動画として生成されたものであり、このような動画の生成手法としては、図示しない画像メモリに蓄積された静止画像を所定の順序で呼び出すなどして行われる。

【0020】このように、画像制御手段によって別個に生成されるリール画像と、背景画像とは、表示制御手段3によって、図7に示したように、ディスプレイ画面D上の所定の領域に組合せて表示される。

【0021】以下、図7に示したように、ディスプレイ画面上の下部領域に3つのリールR₁、R₂、R₃を模した数字の動きを表示し、背景として、女子アレスのリング上の場面を表示する場合について、上記画像制御手段2が行う制御例を、図2ないし図4のフローチャート、および、図5および図6のテーブルを参照しながら説明する。

【0022】前述したように、スロットマシンは、たとえば、バチング球がスタートゲートを通過したときにスタートする。初期値設定（ステップ001）の後、リール制御情報生成手段1からの全リールを回転させよとの指示を持つ（ステップ002）。かかる指示があると（ステップ002でYES）、リール画像生成ルーチンおよび背景画像生成ルーチンを起動する（ステップ003およびステップ004）。本例の場合、リール画像生成ルーチンは、図4に示すように、全リール回転画像を生成する。すなわち、全てのリールが回転している画像を生成する。上記背景画像生成ルーチンは、図6に示すように、全リール回転時用背景画像を生成する。本実施例の場合、たとえば、リング上で2人のレスラーが相手レスラーに技をかけるべく活動している画像が生成される。

【0023】このようなリール画像生成ルーチンおよび背景画像生成ルーチンの実行中は、リール制御情報生成手段1からの第1リール停止動作指示待ち状態となっており（ステップ005）、第1リール停止動作指示があると（ステップ005でYES）、リール画像生成ルーチンおよび背景画像生成ルーチンが実行される（ステップ006および007）。リール画像生成ルーチンは、第2リールR₂および第3リールR₃を回転状態に維持したまま、第1リールR₁のみを停止動作させる画像を生成する。前述したように、第1リール停止動作指示情報には、この第1リールR₁を最終的にどの数字を表示するかの情報を含まっている。具体的には、第1リールR₁は、その回転速度を低下させながら、最終的に所定の数字を表示して止まる。

【0024】一方、背景画像生成ルーチンは、第1リール停止動作用の背景画像を生成する。具体的には、上記全リール回転時用背景生成よりもリング上のレスラーの動きがより自然した状態の画像が生成される。

【0025】次に、第1リールR₁が停止すると、リール制御情報生成手段1からの第2リール停止動作指示待ち状態に移り（ステップ008）、第2リール停止動作指示があると（ステップ008でYES）、リール画像生成ルーチンおよび背景画像生成ルーチンの実行に移る（ステップ009およびステップ010）。

【0026】このリール画像生成ルーチンは、第1リールR₁が停止し、第3リールR₃が回転状態を維持したまま、第2リールR₂が次第に回転速度を低下させ停止してゆく画像を生成する。

【0027】一方、背景画像生成ルーチンは、第2リール停止動作時用の背景画像を生成する。たとえば、リング上の2人のレスラーが技を掛け合いながら、第2リールR₂が最終的に停止する時点とタイミングを合わせて、一方のレスラーが他方のレスラーに掛けた技が決まる、といったような画像が生成される。

【0028】上記のように第2リールR₂が停止すると、上記リール制御情報生成手段1からの第3リール停止動作指示待ち状態となる（ステップ010）。第3リール停止動作指示があると（ステップ010においてYES）、リーチ状態かどうか判定される（ステップ011）。ここでリーチ状態とは、たとえば図8に示すように、すでに停止した第1リールR₁と第2リールR₂の数字が揃っており、もし第3リールR₃の数字が揃うと、全ての数字が揃った「大当たり」の状態となる一手手前であること意味する。

【0029】すなわち、本実施例では、第1リールR₁および第2リールR₂まで停止した時点において、リーチ状態かどうか判別したがい、第3リールR₃を停止させるためのリール画像および背景画像を異ならせるようになっている。

【0030】リーチ状態でない場合には（ステップ011においてNO）、リール画像生成ルーチンおよび背景画像生成ルーチンの実行に移る（ステップ012およびステップ013）。リール画像生成ルーチンは、上述したように、ノン・リーチ時第3リール停止動作用画像生成ルーチンであり、第1リールR₁あるいは第2リールR₂を停止させるとの同様に、第3リールR₃がその回転速度を次第に低下させて、やがて所定の数字を表示して停止するという画像が生成される。

【0031】一方、背景画像生成ルーチンは、ノン・リーチ時第3リール停止動作用背景画像を生成するものであり、上記のようにして第2リールR₂まで停止した時点において、背景において一方のレスラーが他方のレスラーに掛けた技が解け、再び2人のレスラーがリング上で動き回って相手に技を掛けるべく活動するという背景画像が生成される。

【0032】ステップ011においてリーチ状態でない場合は、もはや「大当たり」の可能性がなく、ステップ012およびステップ013を経て、第3リールR₃が停止した時点で、ゲームが終了する。

【0033】他方、ステップ011においてリーチ状態であると判定されると、（ステップ011においてYES）、リール画像生成ルーチンおよび背景画像生成ルーチンの実行に移る（ステップ014およびステップ015）。リール画像生成ルーチンは、リーチ時第3リール停止動作用画像生成ルーチンであり、背景画像生成ルーチンは、リーチ時第3リール停止動作用背景画像生成ルーチンである。

【0034】本実施例では、リール画像生成ルーチン

および背景画像生成ルーチンは、次のように作動する。すなわち、リール画像生成ルーチンにおいては、第3リールR₃の回転が、よりゆっくりとその速度を下げる。一方、背景においては、技を掛けたレスラーが他方のレスラーをフォール状態とし、その後リング上にレフェリーが現れて、「ワン」「ツー」「スリー」とのコールを行うとともにその動作を行う。そしてこの時、上記レフェリーの「ワン」「ツー」「スリー」とのコールおよび動作のタイミングに合わせて、回転速度が遅くなった第3リールR₃が最後の3回の数字変更表示を行い、上記「スリー」とのコールに合わせて第3リールR₃が回転を停止する。

【0035】こうしてリーチ状態が終了すると（ステップ016においてYES）、「大当たり」かどうかが判定され（ステップ017）、「大当たり」である場合には（ステップ017でYES）、リール画像生成ルーチンおよび背景画像生成ルーチンの実行に移る（ステップ018およびステップ019）。このリール画像生成ルーチンは、大当たり時用リール画像生成ルーチンであり、たとえば、図9に表しているように、揃った3つの数字がいっせいに輝きを増して点滅するといった画像を生成し、一方、背景画像生成ルーチンでは、フォール勝ちとなったレスラーの片頭をレフェリーが高々と持ち上げているといった画像を生成する。

【0036】大当たりでない場合（ステップ017でNO）、そのままゲームを終了させてもよいが、たとえば次のようなステップを続行させるのも面白い。すなわち、リール制御情報生成手段1から送信されてくる情報中に、再リーチ指示を含める場合を設定しておき、再リーチ指示がある場合には（ステップ020でYES）、第3リール再回転指示待ち状態となり（ステップ021）、第3リールR₃。再回転指示があると（ステップ021でYES）、リール画像生成ルーチンおよび背景画像生成ルーチンの実行に移る（ステップ022およびステップ023）。

【0037】リール画像生成ルーチンは、最後にいって止んだり回転を停止した第3リールR₃を、再び回転させる画像を生成するルーチンである。背景画像生成ルーチンは、フォールされていてレスラーがそのフォール状態を解き、再びリング上を活動するようになるという画像を生成する。

【0038】こうして第3リールR₃が再回転状態となると、リール制御情報生成手段1からの第3リール停止動作指示待ち状態となり（ステップ024）、第3リール停止動作指示があると（ステップ024でYES）、リール画像生成ルーチンおよび背景画像生成ルーチンの実行に移る（ステップ025およびステップ026）。このリール画像生成ルーチンは、リーチ時第3リール停止動作画像生成ルーチンであり、背景画像生成ルーチンは、リーチ時第3リール停止動作用背景画

像生成ルーチンであり、これについては既に上述したとおりである。

【0039】こうして第3リールR₃が再度停止すると、「大当たり」かどうかが判定され（ステップ027）、「大当たり」である場合には（ステップ028およびステップ029）。このリール画像生成ルーチンおよび背景画像生成ルーチンもまた、既に前述したとおりである。

【0040】以上説明したように、本願発明のスロットマシンおよびその制御方法は、リール制御情報生成手段1からの情報にしたがって、リール画像と、背景画像とを別個に生成し、これに組合せてディスプレイに表示するようしているので、スロットマシンのリールの回転停止状態に合わせて、背景画像を適直構成することができる。その結果、視覚的な面白さがより一層増すとともに、スロットマシンとしてのゲーム性もさらに向上する。

【0041】そして、リール画像に合わせて、背景画像を生成することの意義は、たとえば、前述したように、レフェリーによるフォール状態のカウントダウンおよびその状況を表示画像に同期させて、最終リールである第3リールR₃を段階的に変化させるといったことができるという意味であり、前述の実施例から、本願発明によるゲーム性の向上および視覚的な面白味が理解されよう。

【0042】もちろん、本願発明の範囲は上述した実施例に限定されることではなく、リール画像の様様、背景画像の懸念は、様々な設定が可能である。

【0043】また、上述した実施例では、ディスプレイ上に表れるリールは、第1、第2および第3の3個のリールであるが、このリールの個数も自由に設定することができる。

【0044】また、本願発明のディスプレイ式スロットマシンは、パチンコ機の機能部品として組み込むことができる他、メガル式の専用機としても構成することができる。

【0045】さらに、ディスプレイは、カラー液晶表示パネルなどの小型ディスプレイのほか、C.R.Tなどを用いることにももちろん可能である。

【0046】加えて、上記においては特段の説明を行わなかったが、リール画像および／または背景画像に対応した音声が公知の手法によって出力されるのが通常である。

【図面の簡単な説明】

【図1】本願発明のスロットマシンの一実施例の制御プロック図である。

【図2】本願発明の制御方法の一例を示すフローチャートである。

【図3】本願発明の制御方法の一例を示すフローチャートである。

【図4】本願発明の制御方法の一例を示すフローチャートである。

【図5】図2～図4中の各リール画像生成ルーチンの内容を示すテーブルである。

【図6】図2～図4中の各背景画像生成ルーチンの内容を示すテーブルである。

【図7】ディスプレイ上の表示状態説明図である。

【図8】ディスプレイ上の表示状態説明図である。

【図9】ディスプレイ上の表示状態説明図である。

【符号の説明】

1 リール信号生成手段

2 画像制御手段

3 表示制御手段

D ディスプレイ

R₁ 第1リール

R₂ 第2リール

R₃ 第3リール

【図1】

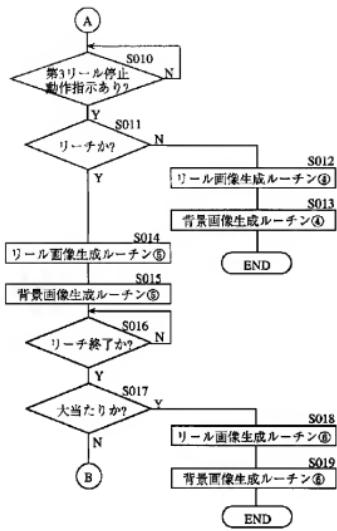
【図2】

【図5】

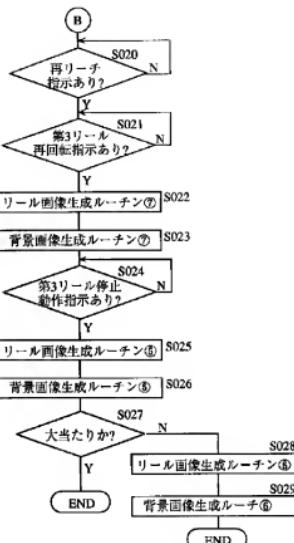
【図6】

ルーチン名	機能
背景画像生成ルーチン ①	全リール回転時用背景画像生成
背景画像生成ルーチン ②	第1リール停止動作時用背景画像生成
背景画像生成ルーチン ③	第2リール停止動作時用背景画像生成
背景画像生成ルーチン ④	ノン・リーチ時 第3リール停止動作時用背景画像生成
背景画像生成ルーチン ⑤	リーチ時 第3リール停止動作時用背景画像生成
背景画像生成ルーチン ⑥	大当たり時用背景画像生成
背景画像生成ルーチン ⑦	第3リール再回転時用背景画像生成

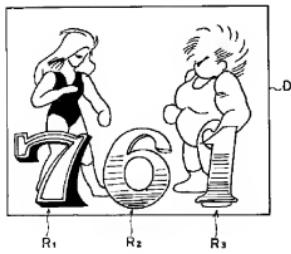
【図3】



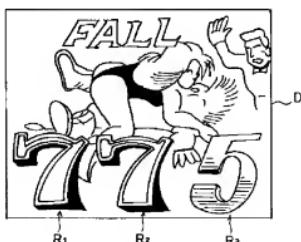
【図4】



【図7】



【図8】



【図9】

